

# Strategic Cost Estimation: Understanding Resource Tradeoffs in China's Defense Modernization Efforts



Jack Bianchi

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**CSBA**

Center for Strategic and Budgetary Assessments

# Our Team



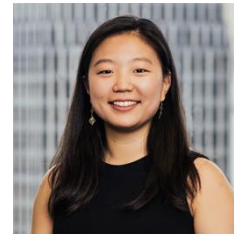
**Jack Bianchi,**  
**Senior Analyst:**  
Asia Strategy  
and U.S.-China Competition



**Dr. Toshi Yoshihara,**  
**Senior Fellow:**  
Asian Security and  
Chinese Strategy



**Harrison Schramm,**  
**Senior Fellow:**  
Applied Mathematics,  
Statistics



**Grace Kim,**  
**Analyst:**  
Long-term Competition  
and East Asian Security



**Peter Kouretsos,**  
**Analyst:**  
U.S. Defense Policy and  
Strategy

- Understand at the *strategic level* the feasible range of China's potential future force structures
- Gain policy-relevant insights into competitive dynamics between U.S. and China and analyze potential interactions
- Aid U.S. competitive strategy development toward China
- Create an extensible methodology that can be applied to other countries/competitions

For this project, the relative effort that a country makes to produce systems is essential; the absolute cost is important but secondary.

# *What is the Strategic Choices Tool?*

The **Strategic Choices Tool (SCT)** is  
an **interactive** decision making tool in which  
users can rapidly consider **alternative future force structures**  
within a **real world budget constraint**.

# Strategic Choices Tool Opening Page

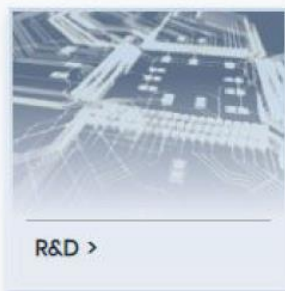
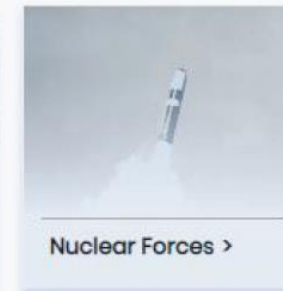
ITEM	MOVE 1 2020 - 2024	MOVE 2 2025 - 2029	Aircraft	Munitions	Ships	Active BCT	Reserve BCT	Active Personnel	Reserve Personnel
Running Total	\$ 62.05 B	\$ 28.64 B	6,693	0	320	31	27	1,337,000	816,600
Target	\$ 117 B	\$ 136 B	-78	4,060	5	0	-1	14,450	-24,750
			6,615	4,060	325	31	26	1,351,450	791,850

Running Total of  
Spending

Categories of  
Spending Options

Summary of User  
Choices

## Categories



# The SCT has a wide range of built-in options

**Air**

Airlift -
Bomber +
Fighter +
ISR/C2 +
Refueling +

## C-130

PLATFORM INFORMATION

↑ OPTION	PLANNED BUY	BASELINE	MOVE 1	MOVE 2	SELECTION	MOVE 1	MOVE 2	RECOMMENDED	MOVE 1	MOVE 2
Increase Buy - Air Force C-130 J (A/C)	8	168	\$1.24B	\$0.68B	0 <input checked="" type="checkbox"/>	\$0.01B	\$0.02B	0	\$0B	\$0B
Reduce Buy - Air Force C-130 J (A/C)	8	168	\$-0.99B	\$-0.55B	<input type="checkbox"/>	\$-0.01B	\$-0.02B	0	\$0B	\$0B
Retire - Air Force C-130 (R/C)	N/A	238	\$-0.27B	\$-0.68B	0 <input type="checkbox"/>	\$0B	\$0B	0	\$0B	\$0B

PERSONNEL INFORMATION

TOTAL COST

Pop-up Box w/Platform Detail

User Makes Selection Here

List of Add/Cut Options

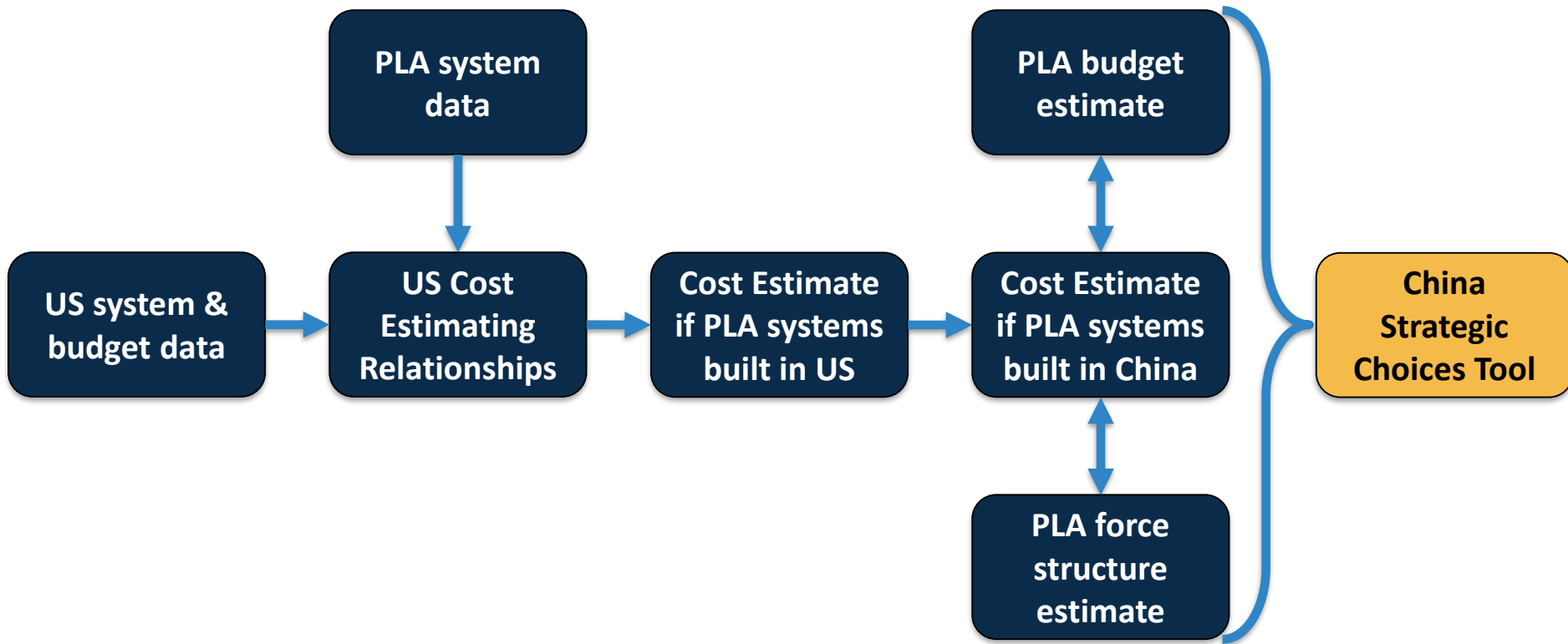
Total Cost (Savings) of Selection by Move

C-130

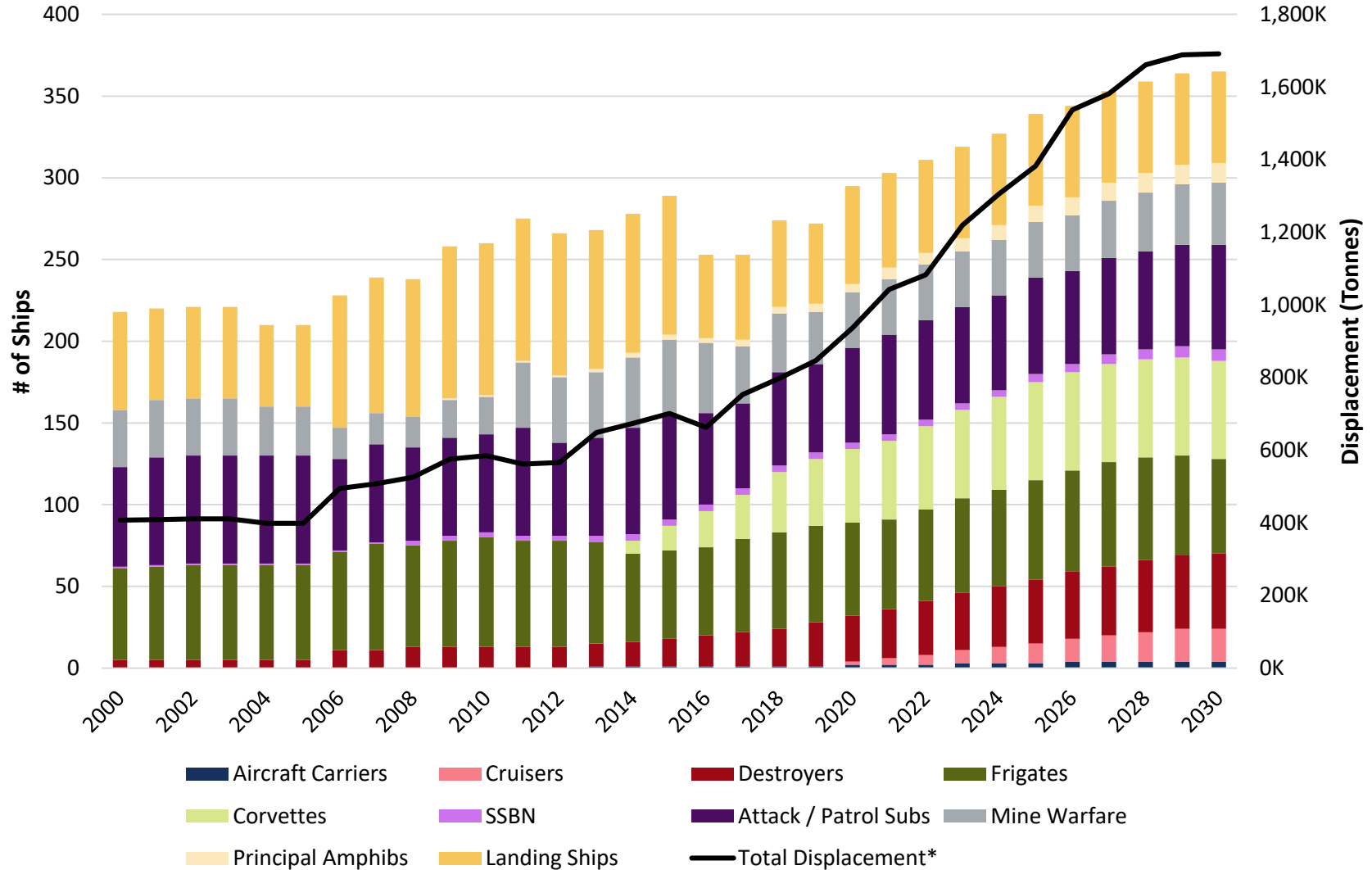
Medium-size transport aircraft capable of performing a variety of combat delivery (tactical airlift) operations across a broad range of mission environments.

Ok

# China SCT Project Roadmap



# Cost-informed Force Structure Projection Example: Major PLAN Ships



**2021-2030: 3% average annual real growth in procurement spending**

**\*Excludes subs; 2000-2019 historic annual tonnage growth: 4.1%; 2020-2030 projected annual tonnage growth: 6.6%**



## Conference Presentations:

- International Cost Estimating and Analysis Association 2019 Conference
- Military Operations Research Society (MORS) 2019 Emerging Techniques Forum
- MORS 2020 Cost Analysis Workshop

## Publications

- “Strategic Cost Estimation,” *OR/MS Today*, October 2019
- NPS Acquisition Research Symposium Paper, May 2020



## Project Activities

- Currently holding workshops and exercises with PLA experts, statisticians, cost analysts, and economists to test and refine the estimates and the tool
- Three Workshops:
  1. October 2019
    - Focus: Air, Sea, and Missiles
  2. December 2019
    - Focus: Ground; O&M costs
  3. Summer 2020
- Three Exercises:
  1. March 2020
  2. Summer 2020
  3. Fall 2020
- **CHINA SCT LAUNCH: FALL 2020**

- U.S.-based cost estimates are a starting point; Chinese production efficiencies and operating practices can be incorporated over time
- No single approach is likely to yield a definitive answer
- Rough order of magnitude cost estimates are feasible and useful for understanding China's potential defense modernization trajectories
- Using the U.S. and China Strategic Choices Tools in iterative exercises and wargames will provide insight into U.S.-China competitive dynamics and improve development of U.S. competitive strategies, operational concepts, and modernization plans



**Technical Lead:**

Jack Bianchi, [bianchi@csbaonline.org](mailto:bianchi@csbaonline.org), 202-719-1345

**Contracting:**

Roger Poor, [poor@csbaonline.org](mailto:poor@csbaonline.org), 202-719-1340

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